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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	09/704,291	LEE, CHENG Y.	
	Examiner	**Art Unit**	
	Benjamin R Bruckart	2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Detailed Action

Claims 1-45 are pending in this Office Action.

Claims 1-9, 13, 17, 20-29, 45, and 30-40 remain rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,825,772 by Dobbins et al.

Claims 10-12 remain rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,825,772 by Dobbins et al in view of U.S. Patent No. 5,995,503 by Crawley et al.

Claims 14-16 remain rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,825,772 by Dobbins et al in view of U.S. Patent No. 6,205,488 by Casey et al

Claims 18-19 and 41-44 remain rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,825,772 by Dobbins et al in view of U.S. Patent No. 6,473,421 by Tappan.

Response to Arguments

Applicant's arguments filed in the amendment filed March 11, 2004, Paper No. 5, have been fully considered but they are not persuasive. The reasons are set forth below.

Applicant's invention as claimed:

Claims 1-9, 13, 17, 20-29, 45, and 30-40 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,825,772 by Dobbins et al.

Regarding claim 1, a method of establishing explicit constrained edge-to-edge paths (Dobbins: col. 2, lines 28, 29; col. 4, lines 21-24) in a one of an Internet Protocol (IP), MPLS and Optical network (Dobbins: col. 24, lines 2-5; Figure 21) that uses a modified open shortest path first (OSPF) routing protocol for constraint route distribution and path computation, comprising steps of (Dobbins: col. 24, lines 13-15):

a) sending traffic engineering link state advertisement (TE-LSA) messages from OSPF routers in the network to a nearest one of at least one traffic engineering route exchange router (TE-X) in the network (Dobbins: col. 5, lines 18-24), to permit each of the at least one TE-X to maintain a traffic engineering link-state database (TE-LSDB) (Dobbins: col. 5, lines 10-17); and

b) queryinq the nearest one of the at least one TE-X to obtain an explicit edge-to-edge path satisfying specified traffic engineering (TE) constraints (Dobbins: col. 2, lines 60 – col. 3, line 8; querying the nearest is the definition of OSPF algorithm and the behavior is described in col. 12, lines 54- col. 13, line 15; Figure 5a).

Regarding claim 2, the method as claimed in claim 1 wherein the step of querying is performed by the first edge router in the network (Dobbins: col. 2, lines 60 – col. 3, line 8).

Regarding claim 3, the method as claimed in claim 1 wherein the step of sending is performed by sending the TE-LSAs directly from the OSPF routers to the nearest one of the at least one TE-X, without flooding the TE-LSAs to other routers in the network (Dobbins: col. 12, lines 54- col. 13, line 15; Figure 5a).

Regarding claim 4, the method as claimed in claim 1 further comprising a step of discovering the nearest one of the at least one TE-X via normal OSPF Router Link-State Advertisement messages (Dobbins: col. 13, lines 50-54).

Regarding claim 5, the method as claimed in claim 4 further comprising a step of compiling and storing a list of all TE-Xs in a routing area and using the list to select a nearest TE-X based on a route cost factor associated with a shortest path route to respective TE-Xs in the list (Dobbins: col. 13, lines 50-54).

Regarding claim 6, a method as claimed in claim 1 further comprising a step of discovering peer TE-Xs in the network by learning at each TE-X of other TE-Xs using normal OSPF Router Link-State Advertisement messages (Router LSAs), and storing a list of other TE-Xs discovered in the network (Dobbins: col. 13, lines 65 – col. 14, line 5).

Regarding claim 7, a method as claimed in claim 6 further comprising a step of sending one of a Hello and Keep-Alive message to each other TE-X discovered in the network (Dobbins: col. 14, lines 2-16).

Regarding claim 8, the method as claimed in claim 7 further comprising a step of sending traffic engineering link states from each of the at least one TE-X to each other TE-X discovered in the network, in order to synchronize the TE-LSDBs (Dobbins: col. 14, lines 17- 23, lines 36-44).

Regarding claim 9, the method as claimed in claim 1 wherein each of the at least one TE-X advertises its capability as a TE-X using a TE-bit in an Options field of Router Link-State Advertisement (Router LSA) messages (Dobbins: col. 15, lines 6-38; TOS type of service and metrics fields; col. 13, lines 65 – col. 14, line 5).

Regarding claim 13, the method as claimed in claim 1 wherein the TE-LSAs include type, length, value, (TLV) fields to define router addresses and link states (Dobbins: col. 15, lines 6-38).

Regarding claim 17, a traffic engineering route exchange router (TE-X) in a network that uses an open shortest path first (OSPF) routing protocol (Dobbins: col. 3, lines 43-49, col. 24, lines 13-15), comprising:

a) a traffic engineering link-state data base (TE-LSDB) compiled using traffic engineering link-state advertisement (TE-LSA) messages received from OSPF routers in the network (Dobbins: col. 5, lines 5-17); and

b) a messaging system for exchanging TE-LSA messages with peer TE-Xs in the network (Dobbins: col. 13, line 65- col. 14, line 23).

Regarding claim 20, the TE-X as claimed in claim 17 wherein on initialization the TE-X advertises its presence in the network using router link-state advertisement (Router LSA) messages (Dobbins: col. 13, lines 65- col. 14, line 23).

Regarding claim 21, the TE-X as claimed in claim 17 wherein a TE-bit is set in the Router LSA messages to advertise to other routers in the network that the TE-X has traffic engineering route exchange capability (Dobbins: col. 15, lines 6-38; col. 13, lines 65 – col. 14, line 5).

Regarding claim 22, the TE-X as claimed in claim 17 wherein the TE-X discovers peer TE-Xs in the network (Dobbins: col. 13, line 65- col. 14, line 23).

Regarding claim 23, the TE-X as claimed in claim 22 wherein the TE-X discovers peer TE-Xs in the network by exchanging normal OSPF routing information with other routers in the network and creating adjacencies with neighbors in the network (Dobbins: col. 14, lines 17-25).

Regarding claim 24, the TE-X as claimed in claim 23 wherein the TE-X further derives and stores a list of peer TE-Xs in the network using a downloaded domain link-state database (Dobbins: col. 14, lines 17-25; col. 5, lines 10-17).

Regarding claim 25, the TE-X as claimed in claim 24 wherein the TE-X further sends one of Hello and Keep-Alive messages to the other TE-Xs in the list in order to discover a designated TE-X and a backup designated TE-X in the network (Dobbins: col. 14, lines 2-16).

Regarding claim 26, a TE-X as claimed in claim 25 wherein the TE-X exchanges TE-LSA messages with the designated TE-X after peering with the designated TE-X, to obtain all current TE-LSAs for the network, and stores the TE-LSAs in the TE-LSDB (Dobbins: col. 14, lines 17-25, lines 36-46).

Regarding claim 27, a TE-X as claimed in claim 26 wherein the TE-X flushes from the TE-LSDB obsolete TE-LSAs when more current TE-LSAs are received from an OSPF router in the network, which originated the TE-LSA (Dobbins: col. 14, lines 36-46; flush is taken to be similar as update).

Regarding claim 28, a TE-X as claimed in claim 17 wherein the TE-X:

a) accepts queries from a first OSPF edge router for an explicit route between the first OSPF edge router and a second OSPF edge router in the network (Dobbins: col. 2, lines 60 – col. 3, line 8; col. 15, lines 52-62);

b) computes the explicit route using information stored in the TE-LSDB (Dobbins: col. 5, lines 10-17); and

c) sends information relating to the explicit route to the first OSPF edge router (Dobbins: col. 26-31; shown in example to send data back).

Regarding claim 29, a TE-X as claimed in claim 27 wherein the TE-X updates the TE-LSDB when the information respecting the explicit route is sent to the first OSPF router (Dobbins: col. 5, lines 13-15).

Regarding claim 45. A data network as claimed in claim 29 wherein the data network is one of an Internet Protocol (IP), Multi-protocol Label Switched (MPLS), and Optical network (Dobbins: col. 24, lines 2-5; Figure 21).

Regarding claim 30, a method of reducing traffic engineering messaging loads in an OSPF network (Dobbins: col. 5, lines 45-50), comprising steps of:

a) configuring at least one OSPF router in the OSPF network as a traffic engineering route exchange router (TE-X) (Dobbins: col. 24, lines 13-15);

b) enabling the at least one TE-X to advertise to other OSPF routers in the network to permit the other OSPF routers to distribute traffic engineering link-state advertisement (TE-LSA) messages to at least one TE-X (Dobbins: col. 24, lines 13-15; col. 5, lines 10-17; col. 13, lines 65 - col. 14, line 5, col. 14, lines 17-23); and

c) enabling the other OSPF routers in the network to send the TE-LSA messages directly to a nearest one of the at least one TE-X, and to query the nearest one of the at least one TE-X for an explicit route to an edge router in the network (Dobbins: col. 5, lines 10-17; col. 2, lines 60 – col. 3, line 8; querying the nearest is inherent in definition of OSPF algorithm and the behavior is described in col. 12, lines 54- col. 13, line 15; Figure 5a).

Regarding claim 31, the method as claimed in claim 30 further comprising a step of enabling the at least one TE-X to build a traffic engineering link-state database (TE-LSDB) using the at least one TE-LSA messages (Dobbins: col. 14, lines 17-23, lines 36-46; col. 5, lines 10-17), and further enabling the TE-X to use the TE-LSDB for computing the explicit route (Dobbins: col. 15, lines 52-62).

Regarding claim 32, the method as claimed in claim 31 further comprising a step of enabling the at least one TE-X to send copies of the TE-LSA messages directly to peer TE-Xs in the OSPF network, and to receive TE-LSA messages directly from peer TE-Xs in the OSPF network (Dobbins; col. 14, lines 17-25).

Regarding claim 33, the method as claimed in claim 32 further comprising a step of enabling the at least one TE-X to flush outdated TE-LSAs from the TE-LSDB when a more current TE-LSA is received (Dobbins: col. 14, lines 36-46).

Regarding claim 34, the method as claimed in claim 30 further comprising steps of:

a) enabling the other OSPF routers in the network to compile a list of the at least one TE-X in the network using network routing information (Dobbins: col. 5, lines 10-25; the routers or switches build a links database);

b) to select the nearest TE-X based on a least cost route of respective routes to respective ones of the at least one TE-X (Dobbins: col. 2, lines 60 – col. 3, line 8; querying the nearest is inherent in definition of OSPF algorithm and the behavior is described in col. 12, lines 54- col. 13, line 15; Figure 5a).

Regarding claim 35, the method as claimed in claim 34 further comprising a step of enabling the other OSPF routers in the network to select a nearest TE-X by sending a probe message to the at least one TE-X in an order of least cost route until a one of the at least one TE-X acknowledges the probe message, thereby accepting to serve as nearest TE-X to the other OSPF router sending the probe message (Dobbins: col. 13, lines 50-54).

Regarding claim 36, the method as claimed in claim 35 further comprising a step of enabling the other OSPF routers in the network to select a backup TE-X by sending a probe message to TE-Xs remaining after selecting the nearest TE-X in an order of least cost route until a one of the remaining TE-Xs acknowledges the probe message, thereby accepting to serve as backup TE-X to the other OSPF router sending the probe message (Dobbins: col. 13, lines 50-59).

Regarding claim 37, the method as claimed in claim 30 further comprising a step of enabling the at least one TE-X to advertise to other OSPF routers in the network using a TE-bit in an option field of an OSPF Router LSA message (Dobbins: col. 15, lines 6-38; TOS type of service and metrics fields; col. 13, lines 65 – col. 14, line 5).

Regarding claim 38, a data network that uses an open shortest path first (OSPF) routing protocol, comprising (Dobbins: col. 24, lines 13-15; col. 5, lines 45-50):

a) a plurality of OSPF routers, at least one of the OSPF routers being adapted to function as a traffic engineering route exchange router (TE-X) (Dobbins: col. 24, lines 13-15; col. 5, lines 10-17); and

b) a remainder of the routers being adapted to send traffic engineering link-state advertisement (TE-LSA) messages directly to a one on the at least one TE-X, to enable the one TE-X to maintain a traffic engineering link-state database (TE-LSDB) for computing explicit routes between edge routers in the data network (Dobbins: col. 13, lines 65-col. 14, line 5; col. 4, lines 21-24; col. 5, lines 10-17).

Regarding claim 39, a data network as claimed in claim 38 wherein the at least one TE-X is further adapted to send a copy of each TE-LSA received from the other OSPF routers in the

data network directly to each peer TE-X in the data network (Dobbins: col. 14, lines 17-25, lines 36-46).

Regarding claim 40, a data network as claimed in claim 39 wherein the other routers in the data network query the one of the at least one TE-X to obtain an explicit route to another router in the data network (Dobbins: col. 2, lines 60 – col. 3, line 8; col. 12, lines 54- col. 13, line 15; col. 15, lines 52-62).

Claims 10-12 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,825,772 by Dobbins et al in view of U.S. Patent No. 5,995,503 by Crawley et al.

Claims 14-16 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,825,772 by Dobbins et al in view of U.S. Patent No. 6,205,488 by Casey et al

Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,825,772 by Dobbins et al in view of U.S. Patent No. 6,473,421 by Tappan.

Claims 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,825,772 by Dobbins et al in view of U.S. Patent No. 6,473,421 by Tappan.

Regarding claim 10,

The Dobbins reference teaches a system of connection-oriented services in a packet switched data network that uses LSA packets between routers.

The Dobbins reference does not explicitly state the use of resource reserved LSAs.

The Crawley reference teaches a method as claimed in claim 1 further comprising a step of sending resource reserved (RR) TE-LSAs from the TE-X to peer TE-Xs in the network to advise the peer TE-Xs of resources reserved when an explicit constrained path is established (Crawley: col. 2, lines 34-45).

Crawley further teaches this method overcomes the failures of providing quality of service routing functions in a connectionless network (Crawley: col. 2, lines 18-24).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system of connection-oriented services in a packet switched data network that uses LSA packets between routers as taught by Dobbins while employing LSA resource requests as taught by Crawley in order to provide quality of service routing functions in a connectionless network (Crawley: col. 2, lines 18-24).

Claims 11 and 12 are rejected under the same rationale given above. In the rejections set fourth, the examiner will address the additional limitations and point to the relevant teachings of Dobbins et al and Crawley et al.

Regarding claim 11, the method as claimed in claim 10 further comprising a step of sending a release explicit route message from an OSPF router that requested an explicit constrained path to the nearest TE-X, after the explicit constrained path is released, to permit the TE-X to flush RR TE-LSAs related to the constrained path that was released (Crawling: col. 10, lines 20-37).

Regarding claim 12, the method as claimed in claim 11 further comprising a step of sending resource reserved (RR) TE-LSAs from the TE-X to peer TE-Xs in the network to permit the peer TE-Xs to flush the RR TE-LSAs related to the explicit constrained path that was released (Crawling: col. 10, lines 20-37).

Regarding claim 14,

The Dobbins reference teaches a system of connection-oriented services in a packet switched data network that uses LSA packets between routers with TLV fields.

The Dobbins reference does not explicitly state the LSA having sub-TLV fields.

The Casey reference teaches an LSP packet (equated to LSA) that has a header field, which carries the hello message and also has the label space id (VPN ID) (Casey: col. 4, lines 16-29)

The Casey reference further teaches this VPN service overcomes problems of address conflict, security problems, scalability issues and performance problems (Casey: col. 1, lines 24-40, lines 45-49).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system of connection-oriented services in a packet switched data network that uses LSA packets between routers with TLV fields as taught by Dobbins while employing a VPN ID in a subfield of the LSA as taught by Casey in order overcome problems of address conflict, security problems, scalability issues and performance problems (Casey: col. 1, lines 24-40, lines 45-49).

Claim 15 is rejected under the same rationale given above. In the rejections set fourth, the examiner will address the additional limitations and point to the relevant teachings of Dobbins et al and Casey et al.

Regarding claim 15, the method as claimed in claim 14 wherein the sub-TLV is a VPN sub-TLV used to indicate to other nodes in the network the VPN Identifier (VPN ID) that is associated with a router (Casey: col. 4, lines 16-29).

Regarding claim 16, the method as claimed in claim 14 wherein the sub-TLV is a Replicating Capable sub-TLV used to indicate to other nodes that a router is capable of replicating data to more than one end point (Casey: col. 3, lines 59- col. 4, line 4; links between VRs and one or more routers at each private network).

Regarding claim 18,

The Dobbins reference teaches a system of connection-oriented services in a packet switched data network that uses LSA packets between routers.

The Dobbins reference does not explicitly state routers or switches acting as area border routers.

The Tappan reference teaches TE-X as claimed in claim 17 wherein the TE-X is an area border router (ABR) (Tappan: col. 4, lines 60-67).

Tappan further teaches this approach relieves the receiving router of the need to perform an expensive longest-match search: the label points the receiving router directly to the correct forwarding table entry (Tappan: col. 2, lines 50-53).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system of connection-oriented services in a packet switched data network that uses LSA packets between routers as taught by Dobbins while employing area border routers as taught by Tappan to relieve the receiving router of the need to perform an expensive longest-match search: the label points the receiving router directly to the correct forwarding table entry (Tappan: col. 2, lines 50-53).

Claim 19 is rejected under the same rationale given above. In the rejections set fourth, the examiner will address the additional limitations and point to the relevant teachings of Dobbins et al and Tappan.

Regarding claim 19, the TE-X as claimed in claim 18 wherein the ABR exchanges summary TE-LSAs with peer TE-Xs in other routing areas to provide information respecting paths across another area, and available resources associated with the paths (Tappan: col. 4, lines 60- col. 5, line 4).

Regarding claim 41,

The Dobbins reference teaches a system of connection-oriented services in a packet switched data network that uses LSA packets between routers.

The Dobbins reference does not explicitly state routers or switches acting as area border routers.

The Tappan reference teaches a data network as claimed in claim 38 wherein the at least one TE-X is an area border router (ABR) in a routing area of the data network (Tappan: col. 4, lines 60-67).

Tappan further teaches this approach relieves the receiving router of the need to perform an expensive longest-match search: the label points the receiving router directly to the correct forwarding table entry (Tappan: col. 2, lines 50-53).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system of connection-oriented services in a packet switched data network that uses LSA packets between routers as taught by Dobbins while employing area border routers as taught by Tappan to relieve the receiving router of the need to perform an expensive longest-match search: the label points the receiving router directly to the correct forwarding table entry (Tappan: col. 2, lines 50-53).

Claims 42-44 are rejected under the same rationale given above. In the rejections set fourth, the examiner will address the additional limitations and point to the relevant teachings of Dobbins et al and Tappan.

Regarding claim 42, a data network as claimed in claim 38 wherein the at least one TE-X is an autonomous system border router (ASBR) in an autonomous system of the data network (Tappan: col. 5, lines 62-col. 6, line 6).

Regarding claim 43, a data network as claimed in claim 41 wherein the ABR peers with TE-Xs in other routing areas of the data network to which the ABR is connected (Tappan: col. 4, line 60-col. 5, line 4).

Regarding claim 44, a data network as claimed in claim 42 wherein the ASBR peers with TE-Xs in other autonomous systems and other routing areas of the data network to which the ASBR is connected (Tappan: col. 5, line 62-col. 6, line 32).

The Applicant Argues:

With respect to claim 1, applicant argues the instant applicant overcomes the art because Dobbins et al does not teach:

1) traffic engineering link state advertisements (TE-LSA) messages.

2) traffic engineering route exchange routers

3) traffic engineering link-state database (TE-LSDB)

4) traffic engineering (TE) constraints.

Applicant also argues with respect to claim 1, the invention overcomes the need for all routers in a routing area to flood, process and store a large number of TE-LSAs.

In response, the examiner respectfully submits:

1) The Dobbins reference does teach traffic engineering link state advertisements (TE-LSA) messages (Dobbins: col. 5, lines 18-24). The Dobbins reference teaches if any switch, node or link changes state, other switches in the fabric propagate the change as part of the link state protocol. Dobbins col. 14, lines 29-35 teaches the Link State Advertising packet that uniquely defines the advertisement and the advertisement's current instance.

2) The Dobbins reference does teach traffic engineering route exchange routers (col. 5, lines 18-24). The switches run the link state protocol and rebuild and remap network connections (col. 5, lines 20-24, lines 38-44)

3) The Dobbins reference teaches traffic engineering link-state database (TE-LSDB) (col. 5, lines 10-17). The switches maintain a "links-in-use" database for all connections going through the switch. Dobbins further teaches LSB in col. 15, lines 52-59 as the complete map of the network topology. The Link state advertisement packets even carry a database description component (col. 15, line 2)

4) Dobbins teaches the traffic engineering (TE) constraints throughout the entire invention. (Dobbins: col. 2, lines 60 – col. 3, line 8). Switch check their cache for the end system, if not found, it queries the virtual directory. The constraint is the destination node and the limitations are operational status, administrative status, metrics, cost or bandwidth (col. 3, lines 51-53).

Dobbins teaches cutting down on flooding broadcast packets by never sending the packet past the access switch (col. 5, lines 45-67).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., purposes of establishing paths for traffic engineering, the TE routing information is only required at a point where the path setup is triggered; amendment, page 12) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant's remarks to claims 17, 30, and 38 are addressed in the remarks above related to claim 1. The examiner respectfully submits, the switches are configured through the link state protocol to advertise to other switches, nodes, and paths through LSA. The algorithm employs a OSPF (col. 24, lines 13-15) or Dijkstra algorithm (col. 13, lines 44-46) to find the shortest path.

The Applicant Argues:

With respect to claims 10-12, applicant argues the Crawley reference teaches away because Crawley teaches broadcast advertisements to all other nodes in the network.

With respect to claims 18-19, 41-44, applicant argues Tappan teaches away because Tappan teaches broadcasting to all nodes in the network.

In response, the examiner respectfully submits:

With respect to claims 10-12 and 18-19, 41-44, Dobbins teaches cutting down on flooding broadcast packets by never sending the packet past the access switch (col. 5, lines 45-67). See examiners remarks for claim 1.

In response to applicant's argument that the single reference teaches away from the reference, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case,

The Crawley reference teaches a method as claimed in claim 1 further comprising a step of sending resource reserved (RR) TE-LSAs from the TE-X to peer TE-Xs in the network to advise the peer TE-Xs of resources reserved when an explicit constrained path is established (Crawley: col. 2, lines 34-45).

Crawley further teaches this method overcomes the failures of providing quality of service routing functions in a connectionless network (Crawley: col. 2, lines 18-24).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system of connection-oriented services in a packet switched data network that uses LSA packets between routers as taught by Dobbins while employing LSA resource requests as taught by Crawley in order to provide quality of service routing functions in a connectionless network (Crawley: col. 2, lines 18-24).

The Tappan reference teaches TE-X as claimed in claim 17 wherein the TE-X is an area border router (ABR) (Tappan: col. 4, lines 60-67).

Tappan further teaches this approach relieves the receiving router of the need to perform an expensive longest-match search: the label points the receiving router directly to the correct forwarding table entry (Tappan: col. 2, lines 50-53).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create the system of connection-oriented services in a packet switched data network that uses LSA packets between routers as taught by Dobbins while employing area border routers as taught by Tappan to relieve the receiving router of the need to perform an expensive longest-

match search: the label points the receiving router directly to the correct forwarding table entry (Tappan: col. 2, lines 50-53).

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The Applicant Argues:

With respect to claims 14-16, applicant argues the Casey et al reference fails to teach or suggest traffic engineering LSAs.

In response, the examiner respectfully submits:

With respect to claim 14-16, see examiners remarks on claim 1, The Dobbins reference does teach traffic engineering link state advertisements (TE-LSA) messages (Dobbins: col. 5, lines 18-24). The Dobbins reference teaches if any switch, node or link changes state, other switches in the fabric propagate the change as part of the link state protocol. Dobbins col. 14, lines 29-35 teaches the Link State Advertising packet that uniquely defines the advertisement and the advertisement's current instance.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin R Bruckart whose telephone number is (703) 305-0324. The examiner can normally be reached on 8:00-5:30 PM with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (703) 308-6662. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0324.

Benjamin R Bruckart
Examiner
Art Unit 2155
brb BRB
March 30, 2004

HOSAIN ALAM
SUPERVISORY PATENT EXAMINER